AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application

1. (Currently Amended) An apparatus for filtration comprising:

a micro or ultrafiltration filter chosen from the group consisting of micro and ultrafiltration filters having a filter housing bounding a retentate side and a permeate side that are separated from each other by filter material,

a fluid supply pipe that is connected to the retentate side;

a permeate discharge pipe that is connected to the permeate side;

a shut-off valve that is provided in the permeate discharge pipe;

a controller adapted to operate the shut-off valve at a high frequency ; and

means for increasing the pressure in the permeate side connected to the permeate side when the shut-off valve is closed to a value that is higher than the pressure on the retentate side, wherein the means for increasing the pressure in the permeate side comprises:

at least one permeate circulation circuit which is, on the one side, connected, by an inlet, to the permeate discharge pipe at a point downstream of the shut-off valve and, on the other side, by an outlet, to the permeate side of the filter housing, wherein a permeate circulation pump is provided in the permeate circulation circuit, wherein the permeate circulation circuit has a configuration adapted to maintain a continuous flow of permeate into the permeate side of the filter housing; and

a permeate buffer in the permeate circulation circuit configured to feed the

permeate circulation pump during the closed condition of the shut-off valve.

2. (Previously Presented) The apparatus according to claim 1, wherein the shut-off valve is configured to be opened and closed periodically, wherein the shut-off valve is kept in a closed position so long that a higher pressure is built up on the permeate side than on the retentate side, such that a reversal of the fluid flow in the filter material occurs, wherein the means for increasing the pressure in the permeate side is configured such that, for the rest, a reversal of flow direction of fluid volumes in pipes of the apparatus is prevented.

3. (Canceled)

4. (Previously Presented) The apparatus according to claim 1, wherein, upstream of the outlet of the permeate circulation circuit and downstream of the pump, a restriction is included in order to prevent a jerky pressure build-up.

5. (Previously Presented) The apparatus according to claim 1, wherein the permeate buffer comprises a permeate buffer tank.

6. (Previously Presented) The apparatus according to claim 1, further comprising:

a retentate circulation circuit having an inlet that is connected to a second end of the retentate side of the filter housing and comprising:

an outlet that is connected to the fluid supply pipe that is connected to a first end of the retentate side of the filter housing;

a retentate circulation pump that is provided in a retentate circulation circuit; and

a first end of the retentate side being opposite the second end of the retentate side such that, with a switched-on retentate circulation pump, a cross-flow along the filter material occurs.

7. (Previously Presented) The apparatus according to claim 6, the permeate side of the filter housing having a first end and a second end,

the outlet of the permeate circulation circuit being connected to a first end of the permeate side of the filter housing,

the permeate discharge pipe being connected to a second end of the permeate side of the filter housing, and

the first end being opposite the second end, such that, on the permeate side of the filter housing, a cross-flow along the filter material occurs, wherein the cross-flow on the retentate side has the same flow direction as the cross-flow on the permeate side.

8. (Previously Presented) The apparatus according to claim 7, wherein, in opened condition of the said shut-off valve, the circulation in both said circulation circuits is such that the pressure drop is substantially equal over the whole surface of the filter material.

9. (Previously Presented) The apparatus according to claim 1, further comprising:

more than one permeate circulation circuit for forming a corresponding number of back pulse pressure areas on the permeate side of the filter housing.

10. (Currently Amended) The apparatus according to claim 6~~4~~, further comprising:

a retentate discharge pipe that is connected to the retentate circulation circuit.

11. (Previously Presented) The apparatus according to claim 1, wherein the controller and the shut-off valve are configured to operate the shut-off valve at a frequency in the range of 1 to 1000 Hz.

12. (Previously Presented) The apparatus according to claim 1, wherein the controller is configured to operate the shut-off valve so that in a period comprising the opened and the closed position, the shut-off valve is in an opened position for 50-98% of that period and is in the closed position for 2-50% of that period.

13. (Previously Presented) The apparatus according to claim 1, the shut-off valve comprising:

a valve housing;

a rotating camshaft that is arranged in the valve housing and having a cam, wherein the cam of the camshaft forms a closure in a certain range of rotational positions and allows a free passage of permeate in other positions, and further wherein the camshaft is continuously drivable.

14. (Previously Presented) The apparatus according to claim 13, wherein the controller is configured to control the rotational speed of the camshaft for controlling the back-pulse frequency.

15. (Previously Presented) A method for filtration comprising:

providing an apparatus according to claim 1; and

operating the apparatus so that, in the filter housing, periodically at high frequency, a higher pressure is built up on the permeate side than on the retentate side, such that a reversal of the fluid flow in the filter material occurs, wherein, for the rest, a reversal of flow direction of fluid volumes in pipes is prevented.

16. (Previously Presented) The method according to claim 15, wherein on both the retentate and the permeate side of the filter housing, a cross-flow is maintained.